

B. Amendment to the Claims

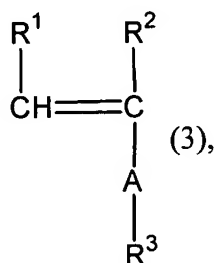
Please cancel claims 1-22, 24, 26-47 and 50 without prejudice or disclaimer.

Please amend claim 23 as follows. The listing of all claims in this application is provided.

1-22. (Cancelled)

23. (Currently Amended) A process for producing an ion conductor structural body comprising at least a polymer matrix, a solvent capable of functioning as a plasticizer and an electrolyte, said process comprising the steps of:

- (a) mixing (i) a monomer represented by the following general formula (3), (ii) a solvent, (iii) an electrolyte and (iv) a polymerization initiator; and
- (b) subjecting said mixture to a polymerization treatment by way of a polymerization reaction to form a polymer matrix as said ion conductor structural body[.].

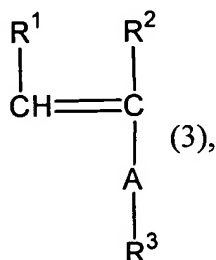


wherein R^1 and R^2 is respectively H or an alkyl group of 2 or less carbon atoms, A is a group containing at least a polyether group, and R^3 is a group having at least an alkyl group of 6 or more carbon atoms.

24. (Cancelled)

25. (Previously Presented) A process for producing an ion conductor structural body comprising at least a polymer matrix, a solvent capable of functioning as a plasticizer and an electrolyte, said process comprising the steps of:

- (a) mixing (i) a monomer represented by the following general formula (3), (ii) a solvent and (iii) an electrolyte to obtain a mixture; and
- (b) subjecting said mixture to a polymerization treatment by way of a polymerization reaction to form a polymer matrix as said ion conductor structural body



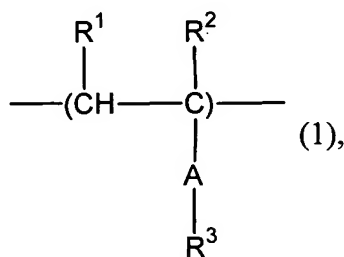
wherein R^1 and R^2 is respectively H or an alkyl group of 2 or less carbon atoms, A is a group containing at least a polyether group, and R^3 is a group having at least an alkyl group of 6 or more carbon atoms; and

a step of forming a crosslinking structure in said polymer matrix by a crosslinking reaction,

wherein said crosslinking structure comprises a covalent bond.

26-47. (Cancelled)

48. (Previously Presented) A rechargeable battery comprising an anode, a cathode and an ion conductor structural body provided between said anode and said cathode, said anode having a face which is opposed to a face of said cathode, wherein said ion conductor structural body comprises an ion conductor structural body (i) which principally comprises a polymer matrix, a solvent capable of functioning as a plasticizer and an electrolyte, said polymer matrix comprising a polymer chain having at least a segment represented by the following general formula (1), a main chain portion of said polymer chain and a side chain portion of said segment having an orientation property, and said polymer matrix having a crosslinked structure, and said ion conductor structural body (i) is arranged such that an ion conductivity in a direction of connecting said face of said anode and said face of said cathode is increased

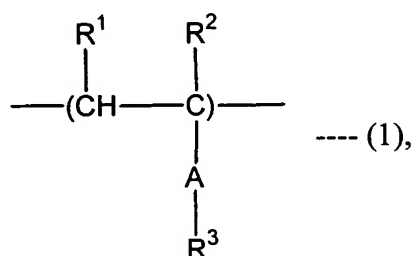


wherein R^1 and R^2 are respectively H or an alkyl group of 2 or less carbon atoms, A is a group having at least a polyether group, and R^3 is a group having at least a alkyl group of more than 6 carbon atoms,

wherein said anode or/and said cathode contain an ion conductor structural body.

49-50. (Cancelled)

51. (Previously Presented) A process for producing a rechargeable battery comprising an anode, a cathode and an ion conductor structural body provided between said anode and said cathode, said anode having a face which is opposed to a face of said cathode, characterized by including a step of arranging a ion conductor structural body having a high ion conductivity and an excellent mechanical strength, principally comprising (a) a polymer matrix, (b) a solvent capable of functioning as a plasticizer and (c) an electrolyte, wherein said polymer matrix (a) comprises a polymer chain having at least a segment represented by the following general formula (1), a main chain portion of said polymer chain and a side chain portion of said segment have an orientation property, and said polymer matrix has a crosslinked structure



wherein R^1 and R^2 are respectively H or an alkyl group of 2 or less carbon atoms, A is a group having at least a polyether group, and R^3 is a group having at least a alkyl group of more than 6 carbon atoms,

such that an ion conductivity in a direction of connecting said face of said anode and said face of said cathode is increased.

52. (Original) The process according to claim 51, further including a step of forming said ion conductor structural body on said anode or/and said cathode and arranging the anode and the cathode so as to oppose to each other.

53. (Original) The process according to claim 51, further including a step of forming said anode to contain said ion conductor structural body or/and a step of forming said cathode to contain said ion conductor structural body.

54. (Original) The process according to claim 53, wherein a solution containing at least one kind of a material selected from the group consisting a polymer, a monomer and an oligomer which are capable of being starting materials for forming a polymer matrix of said ion conductor structural body is impregnated in an active material layer of said anode or/and an active material layer of said cathode and said polymer matrix is formed in said active material layer of said anode or/and said active material layer of said cathode.

55. (Original) The process according to claim 54, wherein the formation of said ion conductor structural body is performed by way of polymerization reaction or/and crosslinking reaction.

56. (Original) The process according to claim 53, wherein said anode or/and said cathode are formed by admixing said ion conductor structural body in an active material and disposing said active material on a collector..